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Client/Matter No.: GP-302119 (2760/59)

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Attorney Docket No.	GP-302119 (2760/59)
Application Number	10/083,718
Filing Date	FEBRUARY 26, 2002
First Named Inventor	MAZEN K. ALSIETY
Group Art Unit	2821
Examiner	CHEN, SHIH CHAO

ENCLOSURES (check all that apply)

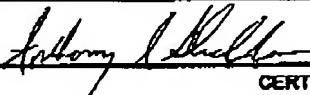
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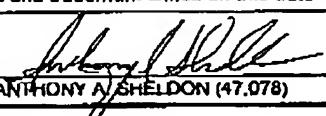
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firm or Individual name	ANTHONY A. SHELDON Registration No. 47,078 CARDINAL LAW GROUP 1803 Orrington Avenue, Suite 2000 Evanston, IL 60201		
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Application Number	10/083,718
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First Named Inventor	MAZEN K. ALSIETY
Group Art Unit	2821
Examiner	CHEN, SHIH CHAO

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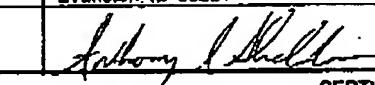
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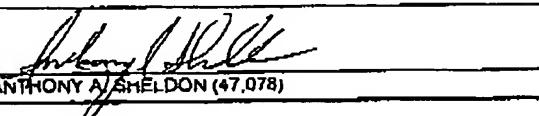
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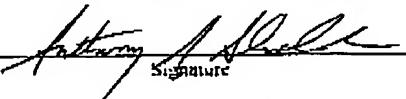
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PATENT
Case No. GP-302119
(2760/59)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re patent application of:)
MAZEN K. ALSLIETY) Examiner: CHEN, SHIH CHAO
Serial No.: 10/083,718)
Filed: FEBRUARY 26, 2002) Group Art Unit: 2821
Title: MICROSTRIP YAGI-UDA ANTENNA)

APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22202-1450

Dear Sir:

Appellants respectfully present their Brief on Appeal as follows:

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1. REAL PARTY IN INTEREST

The real party in interest is Assignee General Motors Corporation, a corporation having an office and a place of business at 300 Renaissance Center, Detroit, Michigan, 48265-3000.

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2. RELATED APPEALS AND INTERFERENCES

Appellant and the undersigned attorneys are not aware of any appeals or any interferences which will directly affect or be directly affected by or having a bearing on the Board's decision in the pending appeal.

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3. STATUS OF CLAIMS

Claims 21-44 are currently pending in the application and claims 21-41 and 43 stand finally rejected under 35 U.S.C. §102(e) as anticipated by U.S. Patent No. 6,326,922 to Hegendoerfer, while claims 42 and 44 stand finally rejected as unpatentable over Hegendoerfer in view of United States Patent 5,220,335 to Huang. Claims 21-44 are on appeal. See, the Appendix.

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4. STATUS OF AMENDMENTS

All previously filed amendments have been entered in the application. The Examiner reopened prosecution after Appellant filed his first Appeal Brief on June 13, 2004.

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5. SUMMARY OF THE INVENTION

An antenna 10 includes a substrate of dielectric material 12 and a plurality of electrically conductive elements (24, 28, 26) disposed on a surface of the substrate to form a Yagi-Uda dipole array. The Yagi-Uda dipole array includes a driven element 22, a reflector 24, and at least one parasitic element 26. The reflector is disposed on one side of a dipole 22, and the at least one parasitic element 26 is disposed on the other side of the dipole. The driven element is separate and distinct from the at least one parasitic element. See, FIG. 1 of the instant application, and pages 3-5 of the specification of *United States Patent Application* 10/083,718.

Dipole 24 includes a first dipole element and a second dipole element 28. In certain embodiments of the invention, the first dipole element and the second dipole element have adjacent ends 30 spaced apart at equal distances on either side of the longitudinal axis 18 of the substrate.

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6. ISSUES

Are claims 21-41 and 43 anticipated under 35 U.S.C. §102(e) by *Hegendoerfer*?

Are claims 42 and 44 unpatentable under 35 U.S.C. §103(a) over *Hegendoerfer* in view of *Huang*?

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7. ARGUMENTS

The §102(e) rejection of claims 21-41 and 43 is traversed. In order to maintain this §102(e) rejection, each and every element of the rejected claims must be disclosed in at least as great detail as claimed by the reference. Because *Hegendoerfer* does not disclose "wherein the driven element is separate and distinct from the at least one parasitic element" as recited in independent claims 21 and 34, the rejection is misplaced and should be withdrawn.

The Examiner has mistaken the structures disclosed by *Hegendoerfer* with the claimed structures. *Hegendoerfer* specifically states that the dipole feed points 112 and 114 are connected to the radiator 122 and the LNA 118. "[s]urface mount device (SMDs) are used to facilitate the connection between the symmetrical *dipole feed points 112 and 114* of the *radiator 122 and the LNA 118*." See, column 4, line 14-18 (emphases added). Using the ordinary meaning of the words, structures that are connected cannot be understood to be separate and distinct.

The Examiner's erroneous construction of the reference and claims is evidenced in the record in paragraph 5 of the March 22, 2005 office action. At that time, the Examiner referenced structure 122 of *Hegendoerfer* as *both* the "driven element" and the "dipole". Instead, *Hegendoerfer* discloses that 122 is *actually* a radiator. See, column 4, line 16. The Examiner further references *Hegendoerfer* 102 as a "driven element" although *Hegendoerfer* does not disclose what 102 is, and discloses that numbers 112 and 114 (i.e., the "dipole feed points") are to be driven. See, column 4, line 19. Thus, not only does the Examiner repeatedly call the same structure two different, and inconsistent, terms, the Examiner cites to undisclosed 'disclosures' of the reference.

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These differences are illustrated graphically by comparing the structure *actually disclosed* by *Hegendoerfer* and the structure as disclosed by the instant application.

FIG. 4 of *Hegendoerfer* is reproduced below:

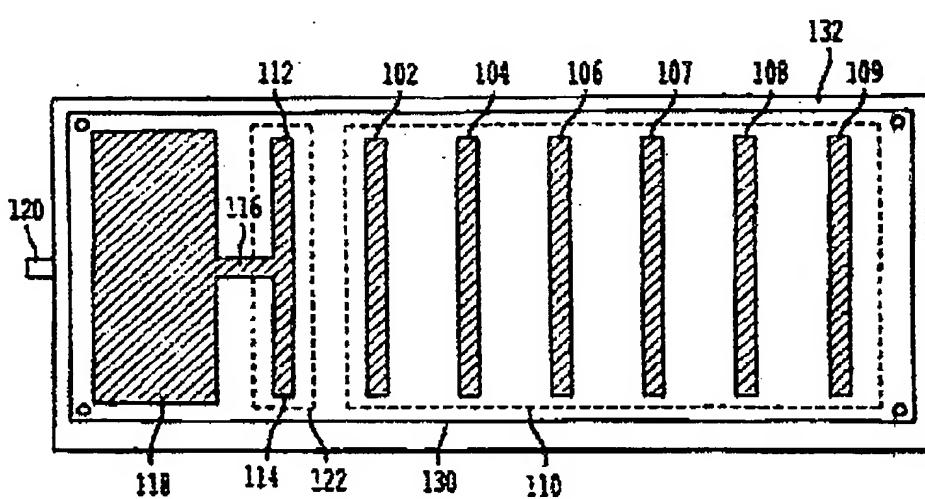
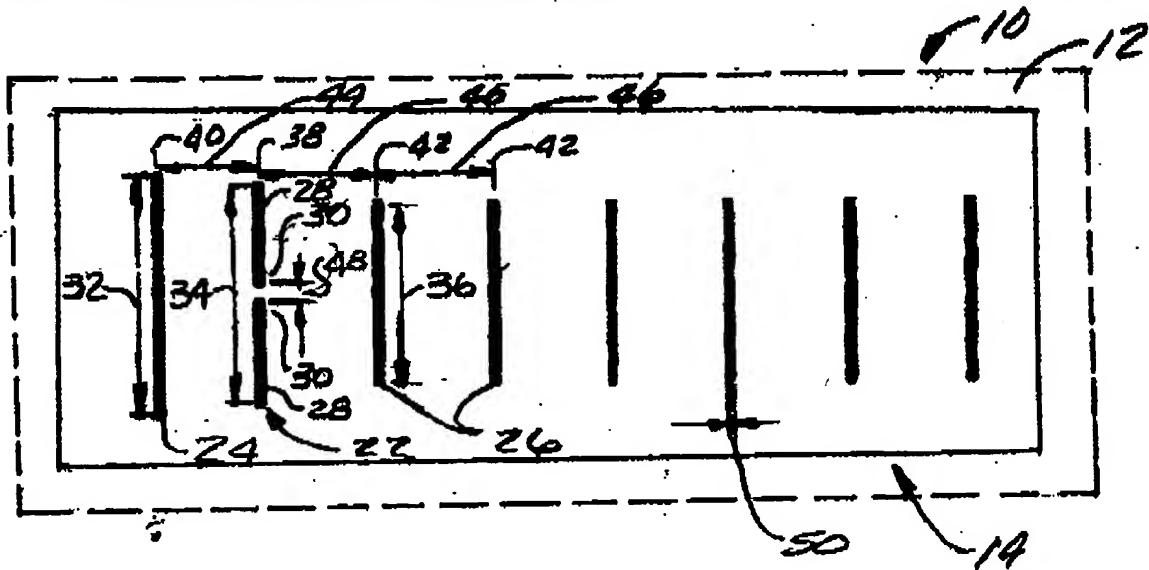


FIG. 1 of the instant application is reproduced below:



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As noted, the instant claims require that the "driven element" (i.e. 22) is separate and distinct from the at least one "parasitic element" (i.e. reflector 32). In contrast, FIG. 4 of *Hegendoerfer* unequivocally shows that "reflector and LNA 118" connects, via 116, to the dipole 112/114.

Additionally, claims 24, 37, and 43 require that the "first dipole element and the second dipole element have adjacent ends spaced apart at equal distances on either side of the longitudinal axis of the substrate." First, as illustrated by FIG. 4 above, *Hegendoerfer* discloses a single dipole 112/114. Second, *Hegendoerfer* does not show that the two elements are spaced apart at equal distances on either side of the longitudinal axis of the substrate. (see, 18 of FIG. 2 from the instant application). As shown in FIG. 1 of the instant application above, dipole elements 28 extend collinearly in opposite directions and have adjacent ends 30 that are spaced apart at equal distances on either side of the longitudinal axis. See, gap 48 depicted in FIG. 1 of the instant application. Therefore, at a minimum, claims 24, 37, and 43 are each patentable over *Hegendoerfer* for at least this additional reason.

As *Hegendoerfer* does not disclose each and every element of the claims, the §102(e) rejection must fall.

Withdrawal of the rejections to claims 21 and 34, as well as claims 22-33 and 35-41 and 43 depending therefrom, is requested.

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Claims 42 and 44 were rejected under 35 U.S.C. §103(a) as unpatentable over United States Patent 6,326,922B1 to Hegendoerfer and United States Patent 5,220,335 to Huang.

The §103(a) rejection of claims 42 and 44 as unpatentable over *Hegendoerfer* in view of *Huang* is traversed. In order to maintain this rejection, each and every element of the claimed invention must be taught or suggested in at least as great detail as claimed.

Claims 42 and 44 depend directly from claims 21 and 34 respectively, and are therefore patentable over the prior art for at least the same reasons as claims 21 and 34.

Additionally, *Huang* does not teach or suggest the elements of the independent claims, and the Examiner correctly does not assert any such teaching. Regardless of whether *Huang* teaches or suggests that the driven element and reflector are separate and distinct, as alleged by the Examiner, *Huang* does not cure the defects of *Hegendoerfer*.

Withdrawal of the rejections to claims 42 and 44 is requested.

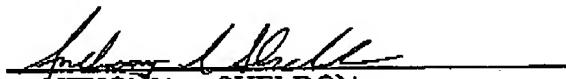
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CONCLUSION

The Examiner's rejections have been obviated by the above remarks. Appellant respectfully submits that claims 21-44 fully satisfy the requirements of 35 U.S.C. §§ 102, 103 and 112. In view of the foregoing remarks, favorable consideration and passage to issue of the present application are respectfully requested.

Dated: August 11, 2005

Respectfully submitted,
MAZEN K. ALSIETY



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CLAIMS APPENDIX

21. An antenna, comprising:
 - a substrate of dielectric material; and
 - a plurality of electrically conductive elements disposed on a surface of the substrate to form a Yagi-Uda dipole array,
 - wherein the Yagi-Uda dipole array includes a driven element, a reflector, and at least one parasitic element, the reflector disposed on one side of a dipole, and the at least one parasitic element disposed on the other side of the dipole, and
 - wherein the driven element is separate and distinct from the at least one parasitic element.
22. The antenna of claim 21, wherein electromagnetic energy is coupled from the driven element to one or more of the at least one parasitic element through space and by surface waves in the substrate.
23. The antenna of claim 22, wherein the driven element includes a first dipole element and a second dipole element extending colinearly in opposite directions from and perpendicular to a longitudinal axis of the substrate.
24. The antenna of claim 23, wherein the first dipole element and the second dipole element have adjacent ends spaced apart at equal distances on either side of the longitudinal axis of the substrate.

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25. The antenna of claim 21, wherein the at least one parasitic element includes a reflector and at least one director.
26. The antenna of claim 25,
wherein the reflector is disposed on a first side of the driven element; and
wherein each director is disposed on a second side of the driven element.
27. The antenna of claim 25,
wherein the reflector extends linearly across a longitudinal axis of the substrate.
28. The antenna of claim 25,
wherein the reflector is centered upon a longitudinal axis of the substrate.
29. The antenna of claim 25,
wherein the reflector is perpendicular to a longitudinal axis of the substrate.
30. The antenna of claim 25,
wherein a first director of the at least one director extends linearly across a longitudinal axis of the substrate.
31. The antenna of claim 25,
wherein a first director of the at least one director is centered upon a longitudinal axis of the substrate.
32. The antenna of claim 25,
wherein a first director of the at least one director is perpendicular to a longitudinal axis of the substrate.

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33. The antenna of claim 21,
wherein the driven element and the at least one parasitic element facilitate a broadcast by
the antenna of a signal having a free space wavelength.
34. An apparatus, comprising:
an antenna support; and
an antenna mounted on the antenna support, the antenna including
a substrate of dielectric material, and
a plurality of electrically conductive elements disposed on a surface of the
substrate to form a Yagi-Uda dipole array,
wherein the Yagi-Uda dipole array includes a driven element, a reflector,
and at least one parasitic element, the reflector disposed on one side of a dipole, and the at least
one parasitic element disposed on the other side of the dipole, and
wherein the driven element is separate and distinct from the at least one
parasitic element.
35. The apparatus of claim 34, wherein electromagnetic energy is coupled from the driven
element to one or more of the at least one parasitic element through space and by surface waves
in the substrate.
36. The apparatus of claim 34, wherein the driven element includes a first dipole element and
a second dipole element extending colinearly in opposite directions from and perpendicular to a
longitudinal axis of the substrate.
37. The apparatus of claim 36, wherein the first dipole element and the second dipole
element have adjacent ends spaced apart at equal distances on either side of the longitudinal axis
of the substrate.

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38. The apparatus of claim 34, wherein the at least one parasitic element includes a reflector and at least one director.
39. The apparatus of claim 38,
wherein the reflector is disposed on a first side of the driven element; and
wherein each director is disposed on a second side of the driven element.
40. The apparatus of claim 34,
wherein the driven element and the at least one parasitic element facilitate a broadcast by the antenna of a signal having a free space wavelength.
41. The antenna of claim 21 wherein the driven element includes a dipole having a first and a second dipole element extending colinearly in opposite directions from and perpendicular to a substrate axis, the first and second dipole elements having adjacent ends spaced apart at equal distances on either side of the substrate axis.
42. The antenna of claim 21 wherein the reflector is separate and distinct from the driven element.
43. The apparatus of claim 34 wherein the driven element includes a dipole having a first and a second dipole element extending colinearly in opposite directions from and perpendicular to a substrate axis, the first and second dipole elements having adjacent ends spaced apart at equal distances on either side of the substrate axis.
44. The apparatus of claim 34 wherein the reflector is separate and distinct from the driven element.

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EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.